

YE FREMKIN, V.V.

137-58-5-9291

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 72 (USSR)

AUTHORS: Mikulinskiy, A.S., Yefremkin, V.V., Selyanskiy, A.P.
Serebrennikova, M.A.

TITLE: Loading of a Calcium Carbide Bearing Charge Into a Hot
Furnace (Zagruzka shikhty, soderzhashchey karbid kaltsiya,
v goryachuyu pech')

PERIODICAL: Tr. Ural'skogo n. -i. khim. in-ta, 1957, Nr 4, pp 200-202

ABSTRACT: In order to achieve conditions conducive to safety in the loading of a charge containing CaC_2 into a hot furnace, a number of experiments was conducted at temperatures ranging from 950°C to 1150° on a pilot-plant furnace with a charge containing NaCl and CaC_2 . Pure NaCl , thoroughly heated for 1-1.5 hrs at a temperature of $500-600^\circ$, was employed during the experiments together with waste products of high-purity CaC_2 (particle size 0.2 mm) containing about 65% CaC_2 . The charge was subjected to briquetting under a pressure of 30 kg/cm^2 . The furnace in which the experiments were conducted consisted of a cylindrical housing with an internal lining of fireclay brick. A Fe retort vessel 140 mm in diameter was placed into the furnace. It was

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137-58-5-9291

Loading of a Calcium Carbide Bearing Charge Into a Hot Furnace

established that a backfire occurred 2-5 minutes after an entire charge weighing approximately 4 kg had been introduced in one batch into the furnace which was inclined at an angle of 25°; a portion of the charge would occasionally be ejected from the furnace. When a small portion of the charge (particularly if the charge had not been briquetted) was placed into the furnace, flames formed over it and subsequent charging proceeded without backfire. Therefore, in order to eliminate the hazard connected with the loading of charges containing CaC_2 into a hot furnace, it is imperative that only a small portion be introduced into the furnace initially, followed by the rest of the charge in small batches only after an open flame has appeared.

G.S.

1. Electric furnaces--Operation
2. Transformers--Operation

Card 2/2

YEFREMKIN, V. V.

SOV/137-58-9-18754

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 86 (USSR)

AUTHORS: Yefremkin, V.V., Fefelova, G.F.

TITLE: Investigation of a Calcium Hydrogenation Process (Issledovaniye protsessa gidrirovaniya kal'tsiya)

PERIODICAL: Tr. Ural'skogo n.-i. khim. in-ta, 1957 (1958), Nr 5, pp 136-151

ABSTRACT: An investigation is made of the possibility of hydrogenating Ca filings with and without the addition of catalyst thereto. It is found that the reaction of Ca filings (without the addition of catalyst) and H_2 occurs at a furnace temperature of 600-700°C. The filings overheat and fuse. Addition of 1.3-2.6% NaCl reduces hydrogenation temperature to 300°. Fusion of the filings can be prevented by introducing a given amount of Ar into the reaction vessel. The hydrogenation process goes in 3 stages: Chemo-sorption of H_2 on the surface of the Ca; an autocatalytic reaction described by the equation $g = k\tau^n + C$ and a period of diffusion in which the hydrogenation reaction goes in accordance with the equation $g = l\sqrt{\tau} - m\tau - d$. 1. Calcium--Hydrogenation 2. Calcium--Catalysis 3. Hydrogenation--Analysis G.S.

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YEFREMKIN, V.V.

Serebryakova, A.V., and V.V. Yefremkin (Urals Branch, Academy of Sciences USSR). A Study of Some Questions of the Chlorination of Titaniferous Materials in a Fusion of Mixed Chlorides, p. 78. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Moscow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

SOV/136-59-4-19/24

AUTHORS: Mikulinskiy, A.S., Professor, Doctor of Technical Sciences and Yefremkin, V.V., Candidate of Technical Sciences

TITLE: Reviews and Bibliography (Retsenzii i bibliografiya)

PERIODICAL: Tsvetnyye metally, 1959, Nr 4, pp 84-85 (USSR)

ABSTRACT: The following book is reviewed: V.A.Pazukhin and A.Ya.Fisher - "Vacuum in Metallurgy". (Metallurgizdat, 1956)

ASSOCIATION: UFAN

Card 1/1

NAKHABIN, V.P., inzh.; MIKULINSKIY, A.S., doktor tekhn.nauk, prof.;
SHIRER, G.B., kand.tekhn.nauk; NEVSKIY, R.A., inzh.; SHOLOKHOV,
V.F., inzh.; YEFREMYIN, V.V., kand.tekhn.nauk; ZHUCHKOV, V.I.,
inzh.; KURNUSHKO, O.V., inzh.

Preparation of silicomanganese and ferromanganese from carbonate
ores of the "Polunochnoye" deposit. Stal' 20 no. 12:1099-1103
D '60. (MIRA 13:12)

1. Zavod ferrosplavov, Tsentral'nyy nauchno-issledovatel'skiy
institut chernoy metallurgii i Institut metallurgii Ural'skogo
filiala AN.

(Silicon-manganese alloys) (Ferromanganese)
(Polunochnoye region--Ore deposits)

MIKULINSKIY, A.S.; YEFREMKIN, V.V.; ZHUCHKOV, V.I.; SHLOKHOV, V.F.;
EPSHTEYN, N.Ye.

Obtaining manganese alloys from Polunochnoye deposit ores in
pilot plant thermal ore furnaces. Trudy Inst. met. UFAN SSSR no.7:
107-117 '61. (MIRA 16:6)

(Manganese alloys)

MOLEVA, N.G.; ZHUCHKOV, V.I.; MIKULINSKIY, A.S.; KUSAKIN, P.S.; YEFREMKIN, V.V.

Change in the phase composition of materials in relation to the
height of the thermal ore furnace in obtaining manganese sinter.

Trudy Inst. met. UFAN SSSR no.7:119-125 '61.

(MIRA 16:6)

(Sintering) (Manganese ores)

NAKHABIN, V.P.; MIKULINSKIY, A.S.; SHIRER, G.B.; NEVSKIY, R.A.; SHOLOKHOV,
V.F.; YEFREMKIN, V.V.; ZHUCHKOV, V.I.; KURNUSHKO, O.V.; EPSHTEYN,
N.Ye.; PANFILOV, S.A.; Prinimali uchastiye: IL'IN, V.M.; ZEMLYAKOV,
V.V.; SHMULEVICH, Ye.Ya.

Smelting out manganese-silicon and ferromanganese from Polunochnoye
deposit ores in a furnace with a power of 10,500 kilovolt-amperes.
Trudy Inst. met. Ufan SSSR no.7:127-145 '61. (MIRA 16:6)
(Manganese alloys) (Sintering)

MIKULINSKIY, A.S.; NAKHABIN, V.P.; SHIRER, G.B.; NEVSKIY, R.A.; STEBLYANKO,
N.V.; YEFREMKIN, V.V.; VOROB'YEV, V.P.; ZHUCHKOV, V.I.;
KURNUSHKO, O.V.

Change in the position of the electrodes and the capacity coefficient
in obtaining manganese alloys. Trudy Inst. met. UFAN SSSR no.7:
147-151 '61. (MIRA 16:6)

(Manganese alloys) (Sintering)

ZHUCHKOV, V.I.; MIKULINSKIY, A.S.; YEFREMKIN, V.V.; MOLEVA, N.G.

Use of a fluxed sinter in obtaining carbon ferromanganese. Trudy
Inst. met. UFAN SSSR no.7:157-161 '61. (MIRA 16:6)
(Manganese alloys) (Sintering)

YEFREMKINA, A. K.

USSR / Cultivated Plants. Medicinal Plants. Essential
Oil Plants. Toxic Plants.

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34356

Author : Yefremkina, A. K.

Inst : University of Belorussian

Title : Propagation of the Chinese Lemon Tree by Green
Peduncles Under Conditions of Belorussian SSR

Orig Pub : Uch. zap. Belorussk. un-t, 1957, vyp. 33, 99-106

Abstract : According to research data gathered in the botan-
ical gardens of the Belorussian University,
the most favorable period for grafting of the
lemon tree under conditions prevailing in the
Belorussian SSR appears to be the first to so-
cond ten day period of July. Grafts taken from
only semi-lignified shoots, show a larger per-
centage of root-taking than those from totally

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USSR / Cultivated Plants. Medicinal Plants. Essential
Oil Plants. Toxic Plants.

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34356.

lignified shoots. Treating of peduncles with an extract from aloe leaves (1 : 100) for 24 hours increases their root-taking capacity by 10%. Im-plantation of the peduncles in a hot-bed requires high atmospheric humidity (85 to 90%) and temperatures of 20 to 25°C. In early graftings, it is recommended to use the middle sections of the shoots, while the upper sections are recommended for late graftings. -- Serobryanniy.

Card 2/2

YEFREMKINA, A.K.

Effect of growth promoting substances on the yield of
Schisandra chinensis. Bot.; issl. Bel. otd. VBO no. 7:215-
216 '65. (MIRA 18:12)

YEFREMOCHKIN, N.V.

Flowsheet for gas producer plant drainage in the northeastern
part of "Shatskii" deposit. Podzem.gaz.ugl. no.2:3-5 '59.
(MIRA 12:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut
podzemnoy gazifikatsii ugley.
(Moscow Basin--Coal gasification, Underground)
(Mine drainage)

YEFREMOCHKIN, N.V.; FISENKO, N.Ye.

Drainage of the experimental gas producer section
under complicated hydrogeological conditions. Nauch.
trudy VNII Podzemnaya no.6:96-101 '62. (MIRA 15:11)

1. Laboratoriya gidrogeologicheskaya Vsesoyuznogo
nauchno-issledovatel'skogo instituta podzemnoy
gazifikatsii ugley.

(Coal gasification, Underground)
(Mine drainage)

YEFREMOCHKIN, N.V.

Evaluating the conditions for the inflow of underground waters of overlying coal series into a gas producer and their effect on the underground coal gasification process in Moscow Basin deposits. Trudy VNIIPodzemgaza no.12:74-84 '64. (MIRA 18:9)

1. Laboratoriya gidrogeologicheskaya Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

YEFRESKOCHEN, N.V.

Role of Uplinski level underground waters in the flooding of a gas generator. Nauch.trudy VNIIPodzemgaza no.10:91-99 '63. (MIRA 17:5)

1. Laboratoriya gidrogeologicheskaya Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

YEFREMOCHKIN, N.V.; KHVOINSKAYA, R.S.

Draining operating gas producing sections Nos. 8 and 9 in
the Moscow Station "Podzemgaz." Nauch. trudy VNIIPodzemgaza
no.9:22-28 '63. (MIRA 16:11)

1. Laboratoriya gidrogeologicheskaya Vsesoyuznogo nauchno-
issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

YEFREMOCHKIN, N.V.

Effect of the air-blast and gas pressure on the performance of vertical drainage holes. Trudy VNIIPodzemgaza no.23:81-85 '65.

(MIRA 18:8)

1. Laboratoriya gornogeologicheskaya Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

YEFREMOV, A.

"Hydrogeological and Meteorological Research Work on Board of the Ice Breaker
'Sedov'," Dokl. AN SSSR, 27, No.2, 1940

BUSHIN, B.; YETEMOV, A.

New devices. Biul.tekh.inform. 4 no.11:24 N '58.
(Building--Tools and implements)

(MIRA 11:12)

BUSHIN, V.; YEFREMOV, A.

Suggestions by finishers of the Cherepovets Trust for the
Construction of Metallurgical Plants. Stroitel' no.11:
18-20 N '59. (MIRA 13:3)

1. Glavnyy inzhener stroitel'nogo upravleniya Spetsstroy
tresta Cherepovetsmetallurgstroy (for Bushin). 2. Glavnyy
inzhener upravleniya Montazhzhilstroy (for Yefremov).
(Building--Tools and implements)

BUSHIN, V., inzh.; YEFREMOV, A., inzh.

Precast concrete porches with mosaiclike surfaces. Zhil.stroi.
no.12:16 '59. (MIRA 13:4)

(Porches)

BUSHIN, V.; YEFREMOV, A.; STOUMOV, V., inzh.

Using assembly-line methods in building large-panel
houses. Stroitel' no.12:7,13-11 D '59. (MIRA 13:3)

1. Glavnyy inzhener upravleniya Spetsstroy (for Bushin).
2. Glavnyy inzhener upravleniya Montazhsilstroy (for Yefremov).
3. Trest Cherepovetsmetallurgstroy, Cherepovets, Vologodskaya
oblast' (for Stoumov).
(Assembly-line methods) (Leningrad--Apartment houses)

YEFREMOV, A.

Scientific and technical cooperation of the Ministry of the
Merchant Marine with foreign countries. Mor. flot 19 no.5:43-44
My '59. (MIRA 12:7)

1. Starshiy inzhener Tekhnicheskogo upravleniya Ministerstva Morskogo
flota.

(Merchant marine)

(Russia--Relations (General) with foreign countries)

BUSHIN, V., inzh.; YEFREMOV, A., inzh.; DMITRIYENKO, A., inzh.

Precast tile floors. Stroitel' no.5:10 My '60. (MIRA 13:9)
(Tiles) (Floors)

YEFREMOV, A. A.; ZEL'VENSKIY, Ya. D.

Studying the purification by rectification of methylphenyldichlorosilane with the method of radioactive indicators. Khim prom no. 3: 201-207 Mr '64. (MIRA 17:5)

1. Moskovskiy Ordena Lenina khimiko-tekhnologicheskii institut
D. I. Mandel'seva.

L 18316-65 EMB(j)/EMI(1)/EMP(e)/ENG(k)/EMI(m)/EPF(c)/EPF(n)-2/EPR/EEC(b)-2/EMP(b)
 Pz-6/Pr-4/Ps-4/Pu-4 IJP(c)/APWL/SSD WH/AT/WH
 S/0089/64/017/005/0329/0335
 ACCESSION NR: AP4049532

AUTHOR: Millionshchikov, M. D.; Gverdtsiteli, I. G.; Abramov, A. S.; Gorlov, L. V.; Gubanov, Yu. D.; Yefremov, A. A.; Zhukov, V. P.; Ivanov, V. Ye.; Kovy*rzin, V. K.; Koptelov, Ye. A.; Kosovskiy, V. G.; Kukharkin, N. Ye.; Kucherov, R. Ya.; Laly*kin, S. P.; Merkin, V. I.; Nechayev, Yu. A.; Pozdnyakov, B. S.; Ponomarev-Stepnov, N. N.; Samarin, Ye. N.; Serov, V. Ya.; Usov, V. A.; Fedin, V. G.; Yakovlev, V. V.; Yakutovich, M. V.; Khodakov, V. A.; Kompaniyets, G. V.

TITLE: The "Romashka" high-temperature reactor-converter /9

SOURCE: Atomnaya energiya, v. 17, no. 5, 1964, 329-335

TOPIC TAGS: nuclear power reactor, reactor feasibility study, research reactor, thermoelectric converter/Romashka

ABSTRACT: The authors briefly describe the construction, parameters, test results, and operating experience of the "Romashka" reactor-

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18316-65
ACCESSION NR: AP4049532

converter unit, which has been in operation at the Kurchatov Atomic Energy Institute since August 1964. The fuel used is uranium dioxide enriched to 90% U^{235} . Graphite and beryllium are used as reflectors. Electricity is generated by silicon-germanium semiconductor thermocouples distributed on the outer surface of the reflector and connected in four groups which can be connected in series or in parallel. The temperatures of the active zone and outer surface are 1770 and 1000C, respectively. The power ratings are 0.50—0.80 kW electric and 40 kW thermal, the maximum current (parallel connection) is 88 A, the neutron flux is 10^{13} neut/cm² sec in the center of the active zone and 7×10^{12} on its boundary. The reactor has a negative temperature reactivity coefficient. The equipment has high inherent stability and requires no external regulator, and little change was observed in the thermocouple properties after 2500 hours of operation. Tests on the equipment parameters are continuing, and the results are being analyzed for use in future designs. Orig. art. has: 8 figures and 1 formula.

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YEFREMOV, H. D.

Dehydration of coal dressing waste by means of centrifuges. A. A. Yefremov. *Tepla-Khos.* 1941, 13-16; *Chem. Zvez.* 1942, 11, 1870. Coal dressing waste which is suitable as boiler fuel without additives (either as such or after pulverizing) was dried for purposes of comparison in chain-ber driers and centrifuges heated by boiler waste heat or coke gas. Centrifuges were found advantageous since they permit reduction of the moisture content to 7-8%. The max. moisture content is limited by the fact that freezing of the fuel lines occurs when the water content of the fuel is more than 6-7%. A new centrifuge plant was designed for reduction of the water content from 10-14% to 6-7% but no operating results are as yet available.

Haus Schindler

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

YEFREMOV, A.A.; ZEL'VENSKIY, Ya.D.

Effect of the isotopic substitution of deuterium for hydrogen
on the vapor pressure of some alcohols. Zhur.VKHO 6 no.3:359-
360 '61. (MIRA 14:6)

(Deuterium) (Alcohols)

ZEL'VENSKIY, Ya. D.; YEFREMOV, A. A.

Separation of hydrogen, carbon, and oxygen isotopes during
the rectification of isopropanol. Izv. vys. ucheb. zav.;
khim. i khim. tekh. 5 no.5:727-730 '62. (MIRA 16:1)

① Moskovskiy khimiko-tekhnologicheskii institut imeni D. I.
Mendeleeva, kafedra tekhnologii razdeleniya i primeneniya
izotopov.

(Isopropyl alcohol) (Distillation, Fractional)
(Isotope separation)

YEFREMOV, A.A.

Variation of the design for the frame of one-story industrial
buildings with a cellar. Prom. stroi. 40 no.5:51 '62. (MIRA 15:5)
(Factories--Design and construction)

ACCESSION NR: AP4031444•

S/0064/64/000/003/0201/0207

AUTHORS: Yefremov, A.A.; Zel'venskiy, Ya.D.

TITLE: Investigation of distillation purification of methylphenyldichlorosilane by the radioactive tracer method

SOURCE: Khimicheskaya promy'shiennost', no. 3, 1964, 201-207

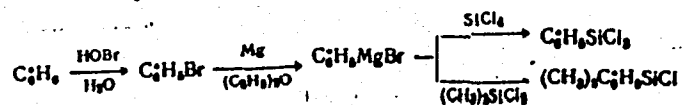
TOPIC TAGS: methylphenyldichlorosilane, purification, distillation, radioactive tracer, tagged carbon, vacuum distillation, separation factor, liquid vapor equilibrium, phenyltrichlorosilane methylphenyldichlorosilane system, dimethylphenylchlorosilane methylphenyldichlorosilane system, heat of vaporization

ABSTRACT: To provide data required for the vacuum distillation purification of methylphenyldichlorosilane (MFDKhS) the liquid-vapor equilibria were experimentally determined for the two binary systems, the dilute solutions of phenyltrichlorosilane (FTKhS) and of dimethylphenylchlorosilane (DMFKhS) in MFDKhS, and the effect of pressure on the effectiveness of MFDKhS rectification was also determined. Concentrations of FTKhS and DMFKhS were determined by the radioactivity of the solutions: their phenyl groups were

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ACCESSION NR: AP4031444

tagged with Cl¹⁴ by the following synthesis:



With concentrations of 0.01-5 mol% (pressures of 5-760 mm Hg) the investigated systems are subject to Henry's law. The separation factor-temperature relationship for the FTKhS-MFDKhS system is shown by $\lg \alpha = -0.0451 + \frac{3.67}{T}$ and for the DMFKhS-MFDKhS system by $\lg \alpha = 0.0230 + \frac{3.67}{T}$

These values can be used for calculations for fractionation of the technical MFDKhS. For MFDKhS, $\lg P = 8.001 - \frac{2440}{T}$

and for DMFKhS, $\lg P = 8.013 - \frac{2400}{T}$

The heat of vaporization for MFDKhS = 10980 cal/mol; for DMFKhS, 11170 cal/mol. The height equivalent of the theoretical degree of separation, its dependence on pressure, and the dependence of the

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ACCESSION NR: AP4031444

degree of separation on pressure were determined. It was found that maximum separation is at pressures of 25-100 mm Hg. "The experimental part of the work was conducted with the participation of V.I. Morozova." "A purified sample of MFDKhS was obtained by M.A. Kleynovsk and A.S..Ginzburg." Orig. art. has: 7 figures, 5 tables and 10 equations.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: IC, NP

NR REF SOV: 009

OTHER: 005

Card 3/3

112-5-1001/EPF/1 EMP(3) 10-10-84 RM

ACCESSION NR. AP4044291

S/0286/64/000/013/0023/0023

AUTHOR: Kleynovskaya, M. A.; Sobolevskiy, M. V.; Ginzburg, A. S.;
Zel'venskiy, Ya. D.; Yefremov, A. A.; Strebkov, V. A.

TITLE: Process for the purification of technical methylphenyl-
dichlorosilane. Class 26, No. 163613 /b

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1964, 23

TOPIC TAGS: methylphenyldichlorosilane, technical methylphenyl-
dichlorosilane, methylphenyldichlorosilane purification

ABSTRACT: An Author Certificate has been issued for a process for the purification of technical methylphenyldichlorosilane involving its treatment with air and subsequent rectification. In order to simplify the process and to increase the yield and purity of the product, the starting material is treated with moist air at room temperature.

ASSOCIATION: Organizatsiya goskomiteta khimicheskoy promyshlennosti
pri gosplane SSSR (Organization of the State Committee of the Chemical
Industry, Gosplan SSSR)

Cord 1/2

L 11285-65

ACCESSION NR: AP4044291

SUBMITTED: 25 Jun 63

ATD PRESS: 3104

ENCL: 00

SUB CODE: HT, OC

NO REF SOV: 000

OTHER: 000

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MILLIONSHCHIKOV, M.D.; GVERDTSITELI, I.G.; ABRAMOV, A.S.; GORLOV, L.V.;
GUBANOV, Yu.D.; YEFREMOV, A.A.; ZHUKOV, V.F.; IVANOV, V.Ye.;
KOVYRZIN, V.K.; KOPTELOV, Ye.A.; KOSOVSKIY, V.G.; KUKHARKIN,
N.Ye.; KUCHEROV, R.Ya.; LALYKIN, S.P.; MERKIN, V.I.; NECHAYEV,
Yu.A.; POZDNYAKOV, B.S.; PONOMAREV-STEPNOY, N.N.; SAMARIN, Ya.N.;
SEROV, V.Ya.; USOV, V.A.; FEDIN, V.G.; YAKOVLEV, V.V.; YAKUTOVICH,
M.V.; KHODAKOV, V.A.; KOMPANIYETS, G.V.

High-temperature reactor-converter "Romashka." Atom. energ.
17 no.5:329-335 N '64. (MIRA 17:12)

YEFREMOV, A.A.; ZEL'VENSKIY, Ya.D.

Preparation of some organochlorosilanes tagged with the
isotope C^{14} . Zhur. ob. khim. 34 no.8:2622-2625 Ag '64.
(MIRA 17:9)

1. Moskovskiy khimiko-tehnologicheskii institut imeni D.I.
Mendeleyeva.

ZEL'VENSKIY, Ya.D.; YEFREMOV, A.A.; LARIN, G.M.

Studying the vapor-liquid equilibrium in the systems hydrocarbon-water with the use of the hydrogen-tritium radioisotope. Khim. i tekhn. topl. i masel 10 no.7:3-7 JI '65. (MIRA 18:9)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskii institut im. D.I. Mendeleeva.

L 53894-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP5014154

UR/0080/55/038/005/0987/0992
541.183+546.18

AUTHOR: Zel'venskiy, Ya. D.; Yefremov, A. A.; Afanas'yev, O. P.

TITLE: Adsorptive purification of trichlorosilane containing traces of phosphorus

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 5, 1965, 987-992

TOPIC TAGS: adsorptive purification, purification, trichlorosilane, phosphorus adsorption, adsorbent

ABSTRACT: Purification of trichlorosilane containing phosphorus using several commercial adsorbents and radioactive tracer technique (PCl_3 containing P^{32}) was studied in both liquid and vapor phases. In the case of the liquid phase, adsorbents used were: A-1 alumina, ASM and KSM silicagels, CKT and BAU charcoals, and NaX synthetic zeollite. Adsorption capacity of these materials for phosphorus was measured at 20°C and PCl_3 concentrations in trichlorosilane ranging from 1 to $10^{-7}\%$. For the liquid phase operation the specific purifying capacity (in kilograms per kilogram) of the adsorbents is as follows: A-1 alumina = 4300, ASM silicagel = 24, CKT charcoal = 4.4, and KSM silicagel = 1.4. In the case of the vapor phase, ad-

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L 53894-65

ACCESSION NR: AP5014154

sorptive capacity of various sorbents was measured by circulating trichlorosilane and phosphorus trichloride vapor until equilibrium was reached. A-1 alumina and ASM silicagel showed the highest adsorption capacity in the vapor phase operation. At 40°C, the adsorption capacity of A-1 alumina at the initial concentration of PCl_3 in trichlorosilane of 2.34 wt. % was 1.01 millimoles per gram. At 40°C, the adsorptive capacity of ASM silicagel at initial PCl_3 concentration of 3.33 wt. % was $4.45 \cdot 10^{-1}$ millimoles per gram. At PCl_3 concentrations higher than $10^{-5}\%$, purifying effectiveness of A-1 alumina is greater in the liquid phase than in the vapor phase. In the case of ASM silicagel the reverse is true at 40°C. Orig. art. has: 6 tables, 3 figures and 4 formulas.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut imeni D. I. Mendeleeva (Moscow Institute of Chemical Technology)

SUBMITTED: 13Mar63

ENCL: 00

SUB CODE: GC

NO REF SOV: 003

OTHER: 001

Card 2/2

YEPREMOV, A.A.; ZEL'VENSKIY, Ya.D.

Liquid - vapor equilibrium in the binary systems methyl-
trichlorosilane - dimethyldichlorosilane and phenyldichloro-
silane - phenyltrichlorosilane. Zhur.prikl.khim. 38 no.11:2513-
2522 N '65. (MIRA 18:12)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiiy institut
imeni D.I.Mendeleeva. Submitted October 11, 1963.

L 42064-66 EWT(d)/EWT(1) TIF(-) 80/80
ACC NR: AP6005353

SOURCE CODE: UR/0413/66/000/001/0094/0094

AUTHORS: Sobolev, A. F.; Kuznetsov, A. A.; Yefremov, A. A.

ORG: none

TITLE: Electronic integrator. ^{16C} Class 42, No. 177646

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 94

TOPIC TAGS: electronic circuit, pulse integrator

ABSTRACT: This Author Certificate presents an electronic continuous signal integrator containing an integrating capacitor. To increase the integration accuracy and the response rate, the signal is fed to the input of the pulse-amplitude converter. The output signals are fed to the input of a pulse-width converter at whose output the integrating storage capacitor is connected (see Fig. 1).

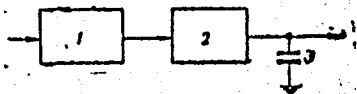


Fig. 1. 1 - pulse-amplitude converter;
2 - pulse-width converter; 3 - capacitor

Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 14Aug64

Card 1/1 a.

UDC: 681.142.334

ACC NR: AP6034916 SOURCE CODE: UR/0419/66/000/003/0005/0011

AUTHOR: Ogloblina, I. P.; Krasnyy, E. B.; Yefremov, A. A.; Musin, T. G.

ORG: none

TITLE: Preparation and properties of high-purity silicon dioxide sorbents

SOURCE: AN BSSR. Vestsi. Seryya khimichnykh navuk, no. 3, 1966, 5-11

TOPIC TAGS: silica gel, silicon dioxide, sorbent, ethyl silicate, silicon tetrachloride, impurity

ABSTRACT: Two methods, both based on the hydrolysis of ethyl silicate and silicon tetrachloride, have been developed at the Institute of Chemical Reagents and High-Purity Substances (IREA) for obtaining high-purity synthetic silicon dioxides having a variety of adsorption properties. These are: $\text{Si}(\text{OC}_2\text{H}_5)_4 + 4\text{H}_2\text{O} \rightarrow \text{Si}(\text{OH})_4 + 4\text{C}_2\text{H}_5\text{OH}$ and $\text{SiCl}_4 + 4\text{H}_2\text{O} \rightarrow \text{Si}(\text{OH})_4 + 4\text{HCl}$. The silica gels obtained from ethyl silicate showed strong water-repellent properties. A comparison of the capacity of heat treated samples to absorb benzene and water vapor showed that surface resistance to water is a function of surface dehydration. Silica

Card 1/2

ACC NR: AP6034916

gels obtained by either method are characterized by a purity of not less than $2 \cdot 10^{-6}\%$ and may be used for the absorption of microimpurities in processing leading to a high degree of purification. [SP]

SUB CODE: 07/SUBM DATE: none/ORIG REF: 012/OTH REF: 002/

Card 2/2

ZEL'VENSKIY, Ya.D.; YEFREMOV, A.A.; AFANAS'YEV, O.P.

Adsorption purification of trichlorosilane for the removal of
phosphorus impurities. Zhur. prikl. khim. 38 no.5:987-992
My '65. (MIRA 18:11)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I.
Mendeleeva.

YEFREMOV, A.D. (Ul'yanovsk).

"Astronomy textbook for grade 10 of secondary schools" by B.A.
Vorontsov-Vel'iaminov. Reviewed by A.D. Efremov. Fiz. v shkole
18 no.2:86-87 Mr-Ap '58. (MIRA 11:2)

(Astronomy--Textbooks)
(Vorontsov-Vel'iaminov, B.A.)

22(1)

SOV/3-59-4-9/42

AUTHOR: Yefremov, A.F., Professor

TITLE: The School is Waiting for an All-Round Educated Teacher

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 4, pp 31-33 (USSR)

ABSTRACT: In connection with the alteration of the vuz curricula and programs taking place at present, the author examines the problem of teaching the history of the Russian literary language in pedagogical institutes. He points out that contrary to the demands contained in the school program, it is suggested in the pedagogical institute programs that the students study the language of ancient Russian literature during their practical training. The author cites the works of Russian literature which the students should use in studying the history of the Russian literary language. There are 2 Soviet references.

ASSOCIATION: Saratovskiy pedagogicheskiy institut (Saratov Pedagogical Institute)

Card 1/1

<p>YEFREMOV, A-E.</p>		<p>PROCESSES AND PROPERTIES INDEX</p>	
<p>Characteristics of the sewage from chemical factories working with nitro compounds. A. E. Yefremov. <i>Izvestiya Vsesoyuz. Inst. Eksp. Med.</i> 1, No. 2, 47-51 (1944). <i>Chem. Zentr.</i> 1946, I, 4955. A detailed consideration of the chem. and biol. properties of such wastes and investigation of the self-purification of tanks holding H_2SO_4 and HNO_3. M. G. Miron</p>			
<p>ASB-LLA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>1940-1949 1950-1959 1960-1969 1970-1979 1980-1989 1990-1999 2000-2009 2010-2019 2020-2029 2030-2039 2040-2049 2050-2059 2060-2069 2070-2079 2080-2089 2090-2099 2100-2109 2110-2119 2120-2129 2130-2139 2140-2149 2150-2159 2160-2169 2170-2179 2180-2189 2190-2199 2200-2209 2210-2219 2220-2229 2230-2239 2240-2249 2250-2259 2260-2269 2270-2279 2280-2289 2290-2299 2300-2309 2310-2319 2320-2329 2330-2339 2340-2349 2350-2359 2360-2369 2370-2379 2380-2389 2390-2399 2400-2409 2410-2419 2420-2429 2430-2439 2440-2449 2450-2459 2460-2469 2470-2479 2480-2489 2490-2499 2500-2509 2510-2519 2520-2529 2530-2539 2540-2549 2550-2559 2560-2569 2570-2579 2580-2589 2590-2599 2600-2609 2610-2619 2620-2629 2630-2639 2640-2649 2650-2659 2660-2669 2670-2679 2680-2689 2690-2699 2700-2709 2710-2719 2720-2729 2730-2739 2740-2749 2750-2759 2760-2769 2770-2779 2780-2789 2790-2799 2800-2809 2810-2819 2820-2829 2830-2839 2840-2849 2850-2859 2860-2869 2870-2879 2880-2889 2890-2899 2900-2909 2910-2919 2920-2929 2930-2939 2940-2949 2950-2959 2960-2969 2970-2979 2980-2989 2990-2999 3000-3009 3010-3019 3020-3029 3030-3039 3040-3049 3050-3059 3060-3069 3070-3079 3080-3089 3090-3099 3100-3109 3110-3119 3120-3129 3130-3139 3140-3149 3150-3159 3160-3169 3170-3179 3180-3189 3190-3199 3200-3209 3210-3219 3220-3229 3230-3239 3240-3249 3250-3259 3260-3269 3270-3279 3280-3289 3290-3299 3300-3309 3310-3319 3320-3329 3330-3339 3340-3349 3350-3359 3360-3369 3370-3379 3380-3389 3390-3399 3400-3409 3410-3419 3420-3429 3430-3439 3440-3449 3450-3459 3460-3469 3470-3479 3480-3489 3490-3499 3500-3509 3510-3519 3520-3529 3530-3539 3540-3549 3550-3559 3560-3569 3570-3579 3580-3589 3590-3599 3600-3609 3610-3619 3620-3629 3630-3639 3640-3649 3650-3659 3660-3669 3670-3679 3680-3689 3690-3699 3700-3709 3710-3719 3720-3729 3730-3739 3740-3749 3750-3759 3760-3769 3770-3779 3780-3789 3790-3799 3800-3809 3810-3819 3820-3829 3830-3839 3840-3849 3850-3859 3860-3869 3870-3879 3880-3889 3890-3899 3900-3909 3910-3919 3920-3929 3930-3939 3940-3949 3950-3959 3960-3969 3970-3979 3980-3989 3990-3999 4000-4009 4010-4019 4020-4029 4030-4039 4040-4049 4050-4059 4060-4069 4070-4079 4080-4089 4090-4099 4100-4109 4110-4119 4120-4129 4130-4139 4140-4149 4150-4159 4160-4169 4170-4179 4180-4189 4190-4199 4200-4209 4210-4219 4220-4229 4230-4239 4240-4249 4250-4259 4260-4269 4270-4279 4280-4289 4290-4299 4300-4309 4310-4319 4320-4329 4330-4339 4340-4349 4350-4359 4360-4369 4370-4379 4380-4389 4390-4399 4400-4409 4410-4419 4420-4429 4430-4439 4440-4449 4450-4459 4460-4469 4470-4479 4480-4489 4490-4499 4500-4509 4510-4519 4520-4529 4530-4539 4540-4549 4550-4559 4560-4569 4570-4579 4580-4589 4590-4599 4600-4609 4610-4619 4620-4629 4630-4639 4640-4649 4650-4659 4660-4669 4670-4679 4680-4689 4690-4699 4700-4709 4710-4719 4720-4729 4730-4739 4740-4749 4750-4759 4760-4769 4770-4779 4780-4789 4790-4799 4800-4809 4810-4819 4820-4829 4830-4839 4840-4849 4850-4859 4860-4869 4870-4879 4880-4889 4890-4899 4900-4909 4910-4919 4920-4929 4930-4939 4940-4949 4950-4959 4960-4969 4970-4979 4980-4989 4990-4999 5000-5009 5010-5019 5020-5029 5030-5039 5040-5049 5050-5059 5060-5069 5070-5079 5080-5089 5090-5099 5100-5109 5110-5119 5120-5129 5130-5139 5140-5149 5150-5159 5160-5169 5170-5179 5180-5189 5190-5199 5200-5209 5210-5219 5220-5229 5230-5239 5240-5249 5250-5259 5260-5269 5270-5279 5280-5289 5290-5299 5300-5309 5310-5319 5320-5329 5330-5339 5340-5349 5350-5359 5360-5369 5370-5379 5380-5389 5390-5399 5400-5409 5410-5419 5420-5429 5430-5439 5440-5449 5450-5459 5460-5469 5470-5479 5480-5489 5490-5499 5500-5509 5510-5519 5520-5529 5530-5539 5540-5549 5550-5559 5560-5569 5570-5579 5580-5589 5590-5599 5600-5609 5610-5619 5620-5629 5630-5639 5640-5649 5650-5659 5660-5669 5670-5679 5680-5689 5690-5699 5700-5709 5710-5719 5720-5729 5730-5739 5740-5749 5750-5759 5760-5769 5770-5779 5780-5789 5790-5799 5800-5809 5810-5819 5820-5829 5830-5839 5840-5849 5850-5859 5860-5869 5870-5879 5880-5889 5890-5899 5900-5909 5910-5919 5920-5929 5930-5939 5940-5949 5950-5959 5960-5969 5970-5979 5980-5989 5990-5999 6000-6009 6010-6019 6020-6029 6030-6039 6040-6049 6050-6059 6060-6069 6070-6079 6080-6089 6090-6099 6100-6109 6110-6119 6120-6129 6130-6139 6140-6149 6150-6159 6160-6169 6170-6179 6180-6189 6190-6199 6200-6209 6210-6219 6220-6229 6230-6239 6240-6249 6250-6259 6260-6269 6270-6279 6280-6289 6290-6299 6300-6309 6310-6319 6320-6329 6330-6339 6340-6349 6350-6359 6360-6369 6370-6379 6380-6389 6390-6399 6400-6409 6410-6419 6420-6429 6430-6439 6440-6449 6450-6459 6460-6469 6470-6479 6480-6489 6490-6499 6500-6509 6510-6519 6520-6529 6530-6539 6540-6549 6550-6559 6560-6569 6570-6579 6580-6589 6590-6599 6600-6609 6610-6619 6620-6629 6630-6639 6640-6649 6650-6659 6660-6669 6670-6679 6680-6689 6690-6699 6700-6709 6710-6719 6720-6729 6730-6739 6740-6749 6750-6759 6760-6769 6770-6779 6780-6789 6790-6799 6800-6809 6810-6819 6820-6829 6830-6839 6840-6849 6850-6859 6860-6869 6870-6879 6880-6889 6890-6899 6900-6909 6910-6919 6920-6929 6930-6939 6940-6949 6950-6959 6960-6969 6970-6979 6980-6989 6990-6999 7000-7009 7010-7019 7020-7029 7030-7039 7040-7049 7050-7059 7060-7069 7070-7079 7080-7089 7090-7099 7100-7109 7110-7119 7120-7129 7130-7139 7140-7149 7150-7159 7160-7169 7170-7179 7180-7189 7190-7199 7200-7209 7210-7219 7220-7229 7230-7239 7240-7249 7250-7259 7260-7269 7270-7279 7280-7289 7290-7299 7300-7309 7310-7319 7320-7329 7330-7339 7340-7349 7350-7359 7360-7369 7370-7379 7380-7389 7390-7399 7400-7409 7410-7419 7420-7429 7430-7439 7440-7449 7450-7459 7460-7469 7470-7479 7480-7489 7490-7499 7500-7509 7510-7519 7520-7529 7530-7539 7540-7549 7550-7559 7560-7569 7570-7579 7580-7589 7590-7599 7600-7609 7610-7619 7620-7629 7630-7639 7640-7649 7650-7659 7660-7669 7670-7679 7680-7689 7690-7699 7700-7709 7710-7719 7720-7729 7730-7739 7740-7749 7750-7759 7760-7769 7770-7779 7780-7789 7790-7799 7800-7809 7810-7819 7820-7829 7830-7839 7840-7849 7850-7859 7860-7869 7870-7879 7880-7889 7890-7899 7900-7909 7910-7919 7920-7929 7930-7939 7940-7949 7950-7959 7960-7969 7970-7979 7980-7989 7990-7999 8000-8009 8010-8019 8020-8029 8030-8039 8040-8049 8050-8059 8060-8069 8070-8079 8080-8089 8090-8099 8100-8109 8110-8119 8120-8129 8130-8139 8140-8149 8150-8159 8160-8169 8170-8179 8180-8189 8190-8199 8200-8209 8210-8219 8220-8229 8230-8239 8240-8249 8250-8259 8260-8269 8270-8279 8280-8289 8290-8299 8300-8309 8310-8319 8320-8329 8330-8339 8340-8349 8350-8359 8360-8369 8370-8379 8380-8389 8390-8399 8400-8409 8410-8419 8420-8429 8430-8439 8440-8449 8450-8459 8460-8469 8470-8479 8480-8489 8490-8499 8500-8509 8510-8519 8520-8529 8530-8539 8540-8549 8550-8559 8560-8569 8570-8579 8580-8589 8590-8599 8600-8609 8610-8619 8620-8629 8630-8639 8640-8649 8650-8659 8660-8669 8670-8679 8680-8689 8690-8699 8700-8709 8710-8719 8720-8729 8730-8739 8740-8749 8750-8759 8760-8769 8770-8779 8780-8789 8790-8799 8800-8809 8810-8819 8820-8829 8830-8839 8840-8849 8850-8859 8860-8869 8870-8879 8880-8889 8890-8899 8900-8909 8910-8919 8920-8929 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9930-9939 9940-9949 9950-9959 9960-9969 9970-9979 9980-9989 9990-9999</p>			

YEFREMOV, A. F.

Dispensaries

Observation on dispensary services available to workers in leading professions at the Molotov Gor'kii Automobile Factory. Sov. zdrav. 11 no. 3, 1952.

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1. YEFREMOV, A. F.
2. USSR (600)
4. Industrial Hygiene
7. Results of the struggle to lower the incidence of diseases at the Gorkiy V. M. Molotov Automogile Plant. Sov. zdrav. 11 no. 5, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

MESHCHANIKOV, B.N.; STRAKHOV, K.I.; LEVIN, Ya.Ye.; BOS'KO, K.P.; KUZ'MIN, V.A.
MELYANTSEY, V.F.; YEFREMOV, A.F.

New method of smelting and pouring oxidising alloys, Prom. energ. 12
no.3:25 Mr '57. (Alloys) (Smelting) (MLRA 10:6)

YEFREMOV, A. G.

Heating from Central Station

Control of the operation of a heating system. Elek. sta. 23 no. 2, 1952.

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SHAKHMATOV, S.S., gornyy inzh.; USACHEV, P.A., gornyy inzh.; YEFREMOV, A.G.,
gornyy inzh.; ZELENOV, P.I., gornyy inzh.; BERDICHEVSKIY, N.I., gornyy
inzh.

Using flotation and settling for dressing nonmagnetic ores. Cor. zhur.
no.7:60-62 JI '64. (MIRA 17:10)

1. Kol'skiy filial AN SSSR (for Shakhmatov, Usachev, Yefremov). 2.
- Olenegorskiy gornoobogatitel'nyy kombinat (for Zelenov, Berdichevskiy).

BATIN, O.V.; TUZINSKIY, A.G.; YEFREMOV, A.G.; SAVCHENKO, I.V.

Drawing 100,753 tons of anthracite in one month from plow-mined long-walls. Ugol' 40 no.6:12-15 Je '65. (MIRA 18:7)

1. Shakhta "Yuzhnaya" No.1 tresta Shakhtantratsit kombinata Rostovugol'.

YEFREMOV, A.I.

The TKM-1 hold bucket loader. Biul.tekh.-ekon.inform. no.6:67-68
'61. (MIRA 14:6)

(Loading and unloading--Equipment and supplies)

YEFREMOV, A.I.

The BMT-3 small bilge bulldozer. Biul.tekh.-ekon.inform.
no.5:71-72 '61. (MIRA 14:6)
(Bulldozers)

YEFREMOV, A.I.

The MVSh-1 and MVS-3 car-unloading machines. Biul. tekhn.-ekon.
inform. no. 2:67-69 '61. (MIRA 14:2).
(Railroads—Freight)

YEFREMOV, A.I. (Petropavlovsk-Kamchatskiy)

On the problem of photodermatitis caused by *Heracleum dulce*.
Vest.derm.i ven. 35 no.4:64-66 Ap '61. (MIRA 14:5)
(SKIN--DISEASES)

YEFREMOV, A.I.

TOROPOV, N.A.; KONOVALOV, P.F.; YEFREMOV, A.I.; ANAN'YEVA, G.V.

Use of the high-temperature X-ray ionization method for studying
processes that take place in alumina production. TSvet.met. 27
no.2:37-42 Mr-Apr '54. (MIRA 10:10)

1. Giprotsement.

(Alumina)

(X rays)

YEFREMOV, A. I.

USSR /Chemical Technology. Chemical Products
and Their Application

I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31638

Author : Konovalov P. F., Yefremov A. I.

Title : Use of Rapid Ionizational Roentgenostructural
Analysis in the Studies of Cements

Orig Pub: Tr. Soveshchaniya po khimii tsementa. M., Prom-
stroyizdat, 1956, 106-113

Abstract: Description of an accelerated ionizational roent-
genographic method for the investigation of
kinetics of formation of silicates under the in-
fluence of high temperatures. Results are given
of studies of the transformations of kaolinite
and alumina at different temperatures and diff-
erent duration of heating.

Card 1/1

YEFREMOV, A. I.

USSR/ Laboratory Equipment. Apparatuses, Their Theory, Construction and Application. I

Abs Jour: Referat. Zhur.-Khimiya, No. 8, 1957, 27324.

Author : P.F. Konovalov, A.I. Yefremov.

Title : Application of Fast Ionization X-Ray-Structural Analysis to Study of Crystalline Substances.

Orig Pub: Zavod. laboratoriya, 1956, 22, No. 7, 824 - 827.

Abstract: The installation with ionization recording (self-quenched counter tube) was constructed on the basis of the x-ray goniometer. The recording of ionization curves is carried out on oscillographic photographic paper 120 mm wide with a mirror galvanometer. Several ionization curves and the voltampere characteristic of the counter are shown.

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24(2,4)

PHASE I BOOK EXPLOITATION

SOV/3149

Kononov, P. F., A. I. Yefremov, and B. V. Volkonskiy

Ionizatsionnaya rentgenostrukturnaya ustanovka dlya issledovaniya kristallicheskikh veshchestv pri razlichnykh temperaturakh (Ionization X-ray Apparatus for Study of Crystalline Substances at Various Temperatures) Leningrad, 1958. 133 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agency: Nauchno-tehnicheskoye obshchestvo promyshlennosti stroitel'nykh materialov, Leningradskoye oblastnoye pravleniye.

Ed. (Title page): N. A. Toropov, Member of the Academy of Building and Architecture, USSR, Professor, Doctor of Technical Sciences;
Ed. (Inside book): V. I. Sadkov.

PURPOSE: This book is intended for physicists and engineers in industry, civil engineers, physical metallurgists, researchers in scientific research institutes and persons affiliated with higher educational institutions who are interested in the construction, application and operation of ionization x-ray units

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Ionization X-ray Apparatus (Cont.)

SOV/3149

for studying the composition and structure of building materials, metals and other substances.

COVERAGE: The book gives a detailed description of the development and operation of an ionization x-ray unit by members of the laboratory for physical chemistry and petrography at Giprotsement and present some practical methods for its utilization. The second part of the book reviews a number of investigations which demonstrate the superiority of this method in the analysis of polycrystalline substances and building materials, and in studies of polymorphic transformation processes, clinker formation, and the hydration processes of cements, clinker metals and other materials. Many of the figures are reproductions of ionization roentgenograms of hydration and dehydration products of metallic salts. No personalities are mentioned. There are no references.

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· AVAILABLE: Library of Congress (QD 945.K67)

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YEFREMOV, A. I. and P. F. KONOVALOV

"Use of Ionizing X-ray Structure Analysis in the Study of Certain
Physicochemical Processes" p. 146

~~"Synthesis and Structure of Hydrosilicates containing Simple and Complex
Heavy Metal Cations." p. 38~~

Transactions of the Fifth Conference on Experimental and Applied Mineralogy
and Petrography, Trudy ... Moscow, Izd-vo AN SSSR, 1958, 516pp.

reprints of reports presented at conf. held in Leningrad, 26-31 Mar 1956. The
purpose of the conf. was to exchange information and coordinate the activities
in the fields of experimental and applied mineralogy and petrography, and to
stress the increasing complexity of practical problems.

SOV/58-59-7-15386

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 7, p 112 (USSR)

AUTHORS: Kononov, P.F., Yefremov, A.I.

TITLE: Application of Ionization X-Ray Diffraction Analysis to the Study of Some Physico-Chemical Processes

PERIODICAL: Tr. 5-go Soveshchaniya po eksperim. i tekhn. mineralogii i petrogr., 1956, Moscow, AS USSR, 1958, pp 146 - 158 ✓

ABSTRACT: The authors describe the design of an ionization X-ray diffraction device. Studies were carried out in the region of polymorphic transitions for γ -2CaO · SiO₂, alumina, and aluminum hydroxide. The authors point out the advantages of the ionization method of registration as compared with the usual photographic method. It makes it possible to study rapidly proceeding processes, as well as high-temperature reactions. (Vses. n.-i. i proyektnyy in-t tsementnoy promyshlennosti, Leningrad, USSR).

Card 1/1

YE FREMOV, A.I.

PLATE I BOOK EXPLOITATION 857/5559

Alma-Ata near USSR. Institut metallurgii. Neuchy sotet po problems zhuro-
prochnykh splavov
Issledovaniya po zhuroprochnosti splavov, t. 5 (Investigations of Heat-Resistant
Alloys, Vol. 5) Moscow, Izdatel AN SSSR, 1959. 423 p. Errata slip inserted.
2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.P. Kuz'min; Editorial
Board: I.P. Bardin, Academician, O.V. Kurdyumov, Academician, B.V. Agayev,
Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Odina,
I.M. Pavlov, and I.P. Zolotarev, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers
in metallurgy, and may also be of interest to students of advanced courses
in metallurgy.

CONTENT: This book, consisting of a number of papers, deals with the proper-
ties of heat-resistant alloys. Each of the papers is devoted to
the study of the factors which affect the properties of alloys on the basis of
the effects of various alloying elements, the effect of the heat-treating
properties of various alloys, the effect of the heat-treating conditions on the
of certain metals as related to the thermal conditions are the object of
another study. The effect of the heat-treating conditions on the properties of
and the properties of alloys. The effect of the heat-treating conditions on the
electrochemical properties of alloys. One paper describes the apparatus and methods
used for growing monocrystals of metals. Monocrystal alloys are critically
examined and evaluated. Results are given of studies of interatomic bonds
and the behavior of atoms in metal. Tests of turbine and compressor blades are
described. No personalities are mentioned. References accompany most
of the articles.

Lutskaya, E.A., R.M. Klyayev, and E.S. Gorchakova. KI 756 Austenitic Steel	19
Rubinshteyn, P.P., Z.A. Shvachkova, G.Ye. Koshalenko, M.K. Kemich, and B.K. Kushnir. KI 696 and KI 694 Heat-Resistant Chromium-Nickel-Titanium Steel	75
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SOV/32-25-3-37/62

25(2)

AUTHORS:

Marinets, T. K., Yefremov, A. I.

TITLE:

Apparatus for the Recording of the Flexure of a Bracket-sample in Testing the Fatigue-Resistance (Pribor dlya registratsii progiba konsol'nogo obraztsa pri ispytanii na ustalostnuyu prochnost')

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 353-355 (USSR)

ABSTRACT:

In a previous paper it was shown that in fatigue-tests in all stages of cyclic disruption-tests a control of the stage of the test is possible by plotting the curve of variations in flexure. In the laboratory of metallography of the institute mentioned in the Association a device was constructed which facilitates an automatic plotting of the curves showing the variation in the flexure of the bracket-samples in tests of the fatigue resistance. The device is equipped with a differential induction element, a measuring arrangement and an electric arrangement for charging the element and the measuring device (Figs 1,2). The flexure of the sample is transformed into an electric quantity by means of the induction element and measured with an electronic automation-recorder-potentiometer EPP-06 or

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Apparatus for the Recording of the Flexure of a Bracket-sample in Testing the Fatigue-resistance

a millivoltmeter MSSHchPr-054. The current-charge of the element and the potentiometer is carried out over a ferro-resonant voltage stabilizer ST-200. In the case under investigation the fatigue-tests are carried out on a bracket-machine VU-8 of the Veler-type. In order to secure an increased accuracy and sensitivity and a reduced vibration the load scheme has been changed (Fig 2). A diagram obtained on a copper sample M 2 at a stress of 13.6 kg/mm^2 is mentioned as example (Fig 3). There are 3 figures and 4 Soviet references.

ASSOCIATION: Leningradskiy politekhnicheskii institut im. M. I. Kalinina
(Leningrad Polytechnic Institute imeni M. I. Kalinin)

Card 2/2

FIGURE 1 BOOK EXPLANATION

807/1375

Academy of Sciences USSR. Institute Metallurgii imeni A.A. Baykova

Ussalon: Metallurgii materialy sovetskoye po ustoiost metallor 22-24
sentabre 1968 g. (Fatigue of Metals; Materials of the Conference on Fatigue
of Metals, September 22-24, 1968) Moscow, 1968. 157 p. 5,500 copies printed.

Re-p. Ed.: I.A. Odling, Corresponding Member, Academy of Sciences USSR; M. of
Publishing House: A.M. Chernov; Tech. Ed.: I.S. Drobizina.

PURPOSE: This collection of articles is intended for mechanical engineers,
metallurgists, and scientific research workers.

CONTENTS: The collection contains discussions relating to fatigue failure of
metals, fatigue in finished parts, theories on metal fatigue, some data on
are a critical review of the literature on metal fatigue, some data on
fatigue failure of metals, and fatigue failure of metals caused by fatigue.
The collection is intended for metallurgists, mechanical engineers, and
metallurgists for applying a new criterion to the notch sensitivity of metals
and high-strength steels are investigated. The mechanism of failure due to
corrosion fatigue of metals is discussed along with pertinent experimental
data. Also presented are the results of testing the fatigue strength of such
metal parts as large-size plates and various parts of machines used in the
petroleum industry. Problems involved in testing metals for fatigue are
examined. No personalities are mentioned. Each article is accompanied by
bibliographic references, most of which are Soviet.

Shervadze, Ye. M. (deceased), B.Ye. Reshetnikov, I.M. Rubinshteyn,
and V.Y. Rudolfovich. Some Data on Physical Regularity Patterns
of Steel Fatigue Failure

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Reuter, E.L. Endurance Under Repeated Loading and Resistance
to Brittle Failure

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Odling, I.A., and S. Ye. Guryich. Criteria of Notch Sensitivity
of the Metal Under Cyclic Loading

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Markovets, M.P. Notch Sensitivity of High-Strength Steels

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Belyayev, B.Ye. Notch Sensitivity of High-Strength Steels

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Vedenkin, S.B., and V.S. Belyayev. Mechanism of Corrosion-
Fatigue Failure of Metals

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Lebedev, I.A., S.F. Markovets, and A.I. Yefremov. Investigating
the Cyclic Strength of Metals by Plotting a Fatigue Diagram

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Basilev, B.M., and L.Y. Dubalov. Corrosion-Fatigue Strength of Pump Rods

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Markovets, M.P. Connection Between the Strength of Materials and of
That of the Part Under Effect of Static, Cyclic, and Impact Loads

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Zil'berman, Yu. Ya., and A.P. Degtyareva. Short-Time Tests for
Fatigue of Bimetallic Specimens With Welding Alloy

155

AVAILABILITY: Library of Congress (PA60-1377)

Card 4/4

11-8-60

S/137/62/000/012/054/085
A006/A101

AUTHORS: Lebedev, T. A., Marinets, T. K., Yefremov, A. I.

TITLE: Investigating cyclic strength of metals by the method of recording fatigue diagrams

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1962, 104, abstract 12I638 (In collection: "Tsiklich. prochnost' metallov", Moscow, AN SSSR, 1962, 141 - 146)

TEXT: The authors investigated the cyclic strength of metals by recording fatigue diagrams. The investigations were made with specimens of annealed red copper (M2) (σ_{-1} 8.9 kg/mm²), technically pure Fe (σ_{-1} 21 kg/mm²) and Ti alloy, containing 2.5% Al (σ_{-1} 34 kg/mm²). In the fatigue tests a device was used for recording the deflection of a bracket specimen; it was thus possible to record automatically the curves of varying deflections of the specimen in the fatigue process, directly during the test. These tests revealed some peculiarities in the behavior of the materials investigated during the process of their cyclic loading. Fatigue diagrams illustrate the development of cracks during

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Investigating cyclic strength of...

the second stage of cyclic loading. They show that the fatigue crack develops initially very slowly and only at the end of the second stage its development is considerably accelerated. The speed of the crack propagation depends mainly upon the magnitude of alternating loading. The data obtained are in a satisfactory agreement with the curves showing the growth of the fatigue crack, obtained by A. Forest on annealed steel specimens. The authors recommend the use of the proposed method for investigating the fatigue strength of metals for a large-scale material range. There are 8 references.

Z. Fridman

[Abstracter's note: Complete translation]

Card 2/2

YEFREMOV, A.I. (Petropavlovsk-Kamchatskiy)

Bicillin-3 therapy of acute uncomplicated gonorrhea in males.
Vest. dermat. i ven. no.2:58-60 '64.

(MIRA 17:11)

YEREMOV, A. I.

4803* Ionization X-Ray Analysis for the Investigation of Cements. Ionizatsionnyi rentgenovskii analiz dlia issledovaniia tsementov. (Russian.) N. A. Toropov, P. F. Kononov, A. I. Efremov, and G. V. Anp'eva. Tsement v. 20 no. 3 May-June 1954, p. 17-20.
Equipment and methods for study of clinker formation. Diagram, photograph, X-ray recordings.

YEFREMOV, A.I.; TYUTIKOV, A.M.

Recording X-ray vacuum spectrograph (for the 20--300 Å range).
Izv. AN SSSR, Ser. fiz. 20 no. 7: 794-797 J1 '56. (MLRA 9:11)
(Spectrograph) (X-ray spectroscopy)

YEFREMOV, A.I.

AUTHOR
TITLE

MANDEL'SHTAM, S.L., YEFREMOV, A.I. 53-1b-11/18
Investigations of the Short-Wave Ultraviolet Radiation of the Sun
(Issledovaniya korotkovolnovogo ul'travioletogo izlucheniya solntsa.
Russian)

PERIODICAL
ABSTRACT

Uspekhi Fiz. Nauk, 1957, Vol 63, Nr 1b, pp 163 - 180 (U.S.S.R.)

The present paper gives a short report on recent results obtained by experimental and theoretical work on the short-wave radiation of the sun which were published since the first survey given of this topic (S.L. MANDEL'SHTAM, Uspekhi Fiz. Nauk, Vol 46, p 145 (1952)). The author further suggests that experiments be carried out by means of artificial earth satellites.

The radiation of the photosphere: The authors describe the paper by H. CLEARMAN, Astrophys. J. Vol 117, p 29 (1953) as the most important in this field. Above all the presence of various elements in the sun is discussed, something is also said on molecular bonds. According to the authors' opinion this paper by Clearman does not contain any essentially new results. Other papers (among them theoretical ones) are then discussed.

The radiation of the chromosphere was investigated by the spectral analysis of light by means of spectrographs. Photoelectric receivers with separation of a narrow spectral region were also used. By special systems

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53-1b-11/18

Investigations of the Short-Wave Ultraviolet Radiation of the Sun

the optical axis of the spectrograph could be oriented to the sun, while the rocket covered the upper part of its orbit. In this manner the recorded spectrum could be farther advanced into the short-wave region. Various papers on this problem are discussed.

The radiation of the corona was investigated in earlier as well as in more recent works by means of photoelectric receivers, i.e. photon counters which separate narrow spectral regions by filters. The papers on this problem are discussed in short.

The variations of radiation and the experiments carried out by means of artificial earth satellites. The results given in the preceding articles indicate the existence of very considerable variations of intensity of the line L_{α} emitted by the chromosphere and of the roentgen region of the spectrum emitted by the corona. These variations are doubtlessly connected with physical processes taking place in the chromosphere and in the corona of the sun. These variations of the intensity of short-wave ultraviolet ionizing radiation of the sun cause considerable perturbations in the terrestrial atmosphere (disturbance of radio communication, magnetic storms etc.). The attempt was recently made to connect these variations with solar eruptions.

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Investigations of the Short-Wave Ultraviolet Radiation of the Sun

The international geophysical year just coincides with the 11 years' period of maximum solar activity, which is very favorable for the investigations of the variations of the intensity of short-wave solar radiation. Artificial earth satellites should be well suited for this purpose. Experiments planned in the USA are mentioned. In the U.S.S.R. the measurements of solar radiation will be begun in the roentgen region of the spectrum. The individual spectral regions will be separated by filters. The radiation currents will be measured by a single receiver. The block system of an apparatus for the recording of the roentgen region of the solar spectrum is illustrated by a drawing. Multipliers of beryllium bronze will be used as radiation receivers for secondary electrons. In front of the receiver are placed filters consisting of aluminum, beryllium, and polyethylene filters of various thicknesses. The calculated transmission curves of various filters are illustrated by a diagram and discussed. Every other two filters are changed in series. In the disk with the filters there are also normal holes through which the radiation directly impinges on to the photocathode. The signals (voltage pulses) coming from the receiver impinge on to a counting and recording radiotechnical system. At the output of this system continuous voltages develop proportional to the counting speed of the pulses. The

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Yefremov, A. I.

AUTHORS: Tyutikov, A. M. , Yefremov, A. I.

20-222/60

TITLE: Secondary Electron Multipliers for Recording Long-Wave X-Ray Radiation (Vtorichno-elektronnyye umnozhiteli dlya registratsii dlinnovolnogo rentgenovskogo izlucheniya)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 286 - 288 (USSR)

ABSTRACT: The application of the open type of a secondary electron multiplier (the multiplier is fastened in the vacuum-zone of the spectrometer without separating windows and the radiation directly falls upon the photo-cathode) as receiver prevents the absorption in the window, whereas all the other advantages of the photoelectric recording are kept up. At such a secondary electron multiplier to the usual requirements (high coefficient of amplification, low background, high performance rating, high stability of the current) is added also the claim for high stability of the parameter in case of application of the device in air. These requirements meet multipliers with diodes, which are made of alloys of a light component (Mg, Be,

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20-2-22/60

Secondary Electron Multipliers for Recording Long-Wave X-Ray Radiation

Al) with a heavy component (Cu, Ni). These alloys were activated by oxygen at a certain temperature. The authors worked out secondary electron multipliers of beryllium-bronze, which combine a high coefficient of amplification with a good usability in air. The method for producing multipliers is shortly described. Such electron multipliers with 16 cascades (including photo-cathode and collector), at a voltage of 3600 V, have a coefficient of amplification of $1 \cdot 10^9$ to $2 \cdot 10^9$. The stability of the coefficient of amplification in case of long working in dry and also in moist air is illustrated by a diagram. The background is 5 to 10 impulses per minute. On occasion of working in a vacuum of 10^{-4} to 10^{-5} torr and in case of current of 10 microamperes, which emerges from the collector, the coefficient of amplification does not change remarkably during a duration of work of 1 to 2 hours. In case of daily operation the apparatus must become overhauled after 3 to 5 months. Such multipliers with a photocathode of nickel have been used successfully for recording the radiation in the reach of 10 to 2 000 Å. The effect of the secondary electron multiplier in the range of the long-wave X-ray radiation and of the remote ultraviolet radiation is at least a few

Jard 2/3

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Secondary Electron Multipliers for Recording Long-Wave X-Ray Radiation

per cent. Thus, the secondary electron multiplier of beryllium-bronze with a photo cathode of platinum, gold, nickel is a device, which fits very well for investigation in the reach of the long-wave X-ray radiation and of the remote ultraviolet radiation. There are 4 figures, and 8 references, 3 of which are Slavic.

PRESENTED: July 22, 1957, by A. A. Lebedev, Academician

SUBMITTED: July 16, 1957

AVAILABLE: Library of Congress

Card 3/3

3.2430 (1482,2806)

17.2450

AUTHORS:

Yefremov, A. I., Podomoshenskiy, A. L.,
Yefimov, O. N., and Lebedev, A. A.

TITLE:

Study of short-wave radiation of the sun

SOURCE:

Akademiya nauk SSSR. Iskusstvennyye sputniki
Zemli. no. 10. Moscow, 1961, 3-11

TEXT: The apparatus was installed in the 2nd Soviet sputnik. Depending on the orientation of the space-ship, the various photon-counter units were switched on and off. The "zero" (i.e., the reading when the entrance window was covered by an aluminum film 1 mm thick) was basically determined by radiation penetrating the photon-counter unit through the gaps between the entrance window and the discs with filters. Owing to the little sensitivity of the apparatus to hard X-rays, no significant increase in the "zero"-level was observed in the polar regions. The effect

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Study of short-wave...

of charged-particle flow on the readings was accounted for by means of a special tungsten-plate in front of one of the entrance windows; this effect was found to be negligible. Sample-readings (taken on August 19, 1960) for a photon-counter with a BeO photo-cathode are shown in a figure; another figure shows the readings for a SrF_2 photo-cathode. Each figure has 3 parts indicating the readings for various positions of the disc with filters. The area and thickness of the Cu, Be, Al, $(\text{CH})_n$ - filters are also indicated. The figures show the variations in the readings due to the rotation of the space-ship. A comparison of the curves corresponding to the SiO_2 , LiF and CaF_2 -filters with those for Al, $(\text{CH})_n$, Be and Cu -filters permitted ascertaining the X-ray level registered. The results of data processing led to the following conclusions: (1) The radiation in the 44 - 110 Å range ($(\text{CH})_n$ -filter) was constant to an accuracy of

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Study of short-wave...

$\pm 8\%$, corresponding to $1.5 \cdot 10^7$ counts $\cdot \text{cm}^{-2} \cdot \text{sec}^{-1}$. (2) The radiation in the 8 - 21 Å range (Al-filter) was constant ($6.2 \cdot 10^4$ counts $\cdot \text{cm}^{-2} \cdot \text{sec}^{-1}$) except for the time between 15 hr. 45 min. and 15 hr. 54 min., when it increased by a factor of 3.2, and also between 14 hr. 24 min. and 14 hr. 28 min., when it increased by 63%. (3) In the region below 8 Å (Be-filter), the radiation was very weak and often could not be distinguished from the background radiation of non-solar origin. (4) During increased solar activity, the radiation in the 5 - 10 Å range (Be-filter) increased elevenfold. (5) In the 1.4 - 3 Å range (Cu-filter), only background radiation of non-solar origin was recorded. In order to determine the energy flux from the recorded data, it was assumed that the spectral distribution of the radiation follows the law of black-body radiation (Planck's

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Study of short-wave...

Law). A figure shows the dependence of output signals on sun temperature for a receiver with BeO-photocathode and Cu, Be, Al, and (CH)_n-filters. Another figure shows the spectral distribution of the short-wave radiation. It was found that the radiation fluctuations are constant for wavelengths shorter than 20 Å and in particular for those shorter than 10 Å. The temperature of the quiescent corona was found to be almost double the value obtained by American investigators (Ref. 3: H. Friedman, Trans. Intern Astr. Un., 10, 706, 1960, Cambridge Univ. Press.). The observed flare, too, corresponds to a higher temperature $6.5 \cdot 10^6$ °K as compared to $(4 \div 2) \cdot 10^6$ °K). There are 7 fi- and 3 references : 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: H. Friedman, Trans. Intern. Astr. Un., 10, 706, 1960, Cambridge Univ. Press. X

SUBMITTED: April 10, 1961

Card 4/4

33309

S/560/61/000/010/007/016
D299/D302

9.6/50 (also 1482)

AUTHORS: Yefremov, A. I., Podmoshenskiy, A. L., Ivanov,
M. A., Nikiforov, V. N., and Yefimov, O. N.

TITLE: Filtering equipment for study of the short-
wave radiation of the sun

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki
Zemli. no. 10. Moscow, 1961, 48-54

TEXT: The method of investigation involves separation of
the various spectral components of the short-wave radiation of
the sun by a set of filters which successively pass in front of
a detector. The most suitable detector for such purposes is a
secondary-electron multiplier which operates under the condi-
tions of cosmic-space vacuum. The main requirement towards the
photocathode of the detector is a sharp decline in its photo-
emission in the near ultraviolet and visible regions of the
spectrum. The most suitable material for such photocathodes is X

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Filtering equipment for...

BeO and SrF_2 . The spectral sensitivity of secondary-electron multipliers with such cathodes is shown in a figure. The filters are mounted on a disk which rotates in front of the detector. Each second, the disk makes $1/12$ of a full turn, placing a different filter in front of the detector. Six positions of the disk are occupied by filters for soft X-rays and far-ultraviolet radiation; three have filters of crystalline quartz for the ultraviolet region with wavelength longer than 1500 \AA , where the sun's radiation does not undergo fluctuations; the quartz filters can be used for correcting the readings of the apparatus related to the other filters; thereby, a β -source (radioactive C^{14}) is placed in front of the apparatus for calibrating its sensitivity. Two other positions serve for checking the zero of the apparatus. The above method of investigation has the following advantages over the Geiger-Müller counter method: (1) The filters can be chosen from a wide

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range of materials, as they are not part of the detector itself (as in the case of Geiger counters). (2) The radiation in the various spectral regions is measured by a single detector, and not by different ones (as with Geiger counters), which excludes errors due to variations in the sensitivity of the various detectors. (3) A wide spectral range (from X-ray to ultraviolet) can be covered (unlike Geiger counters). (4) The sensitivity to cosmic-ray and hard X-ray background is smaller. (5) The range of recorded counting-rates is at least a hundredfold that of Geiger counters. (6) Regular checking of the zero and of the sensitivity of the apparatus is possible. The apparatus consists of 2 main parts: the three optical units $C\phi-1$, $C\phi-2$, $C\phi-3$, (SF-1, SF-2, SF-3), and the recording unit PT (RT). Each of the SF-units incorporates 2 detectors and disks with filters, a relay mechanism for turning the disks, a preamplifier, and optical sensors for switching off the apparatus when it is on the dark side of the orbit. The SF-units are placed on the outside of the space-ship at various points. The presence of

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3 autonomously operating units, each having 2 detectors, permits increasing the total angle of vision of the apparatus. The RT-unit, placed inside the space-ship, incorporates 3 autonomous counting-rate meters (CRM) with a common output connected to the telemetering system; each CRM is linked to its SF-unit. The radiation is recorded by means of pulse counting. The pulses pass through the secondary-electron multiplier, the pre-amplifier, and the integrating circuit. For greater accuracy, the integrating circuit of each counting-rate meter operates over 3 ranges, corresponding to 0 - 500 counts per sec., 0 - 5000 counts per sec., and 0 - 50000 counts per sec. Each SF-unit is switched on autonomously by means of a special sensor. Particular care is taken to prevent switching-on by light reflected from the earth's surface. The overall power requirement of the apparatus is 12 watt. To ensure a normal heat balance, the SF-units on the outside of the space-ship have aluminum polish and colorless-oxidized casings. The equipment was tested and calibrated in the laboratory prior to being installed in

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the Sputnik. There are 10 figures and 8 references: 9 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: H. Friedman, Trans. Intern. Astr. Un., 10, 706, 1960, Cambridge Univ. Press.

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D228/D307

3,2430

AUTHORS: Yefremov, A. I., Podmoshenskiy, A. L., Yefimov, O. N.
and Lebedev, A. A.

TITLE: Investigating short-wave solar radiation

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 8, ab-
stract 7G53 (V sb. Iskusstv. sputniki Zemli, no. 10,
M., AN SSSR, 1961, 4-11)

TEXT: The authors state the results of measuring the intensity of short-wave solar radiation through different filters by means of secondary-electron multipliers, working under pulse-counting conditions on the 2nd space satellite of 19 August 1960. Specimen records of readings are given. These were made on equipment with a BeO photocathode when the sun was quiet (14.15 hrs - 14.21 hrs; 17.18 hrs - 17.23 hrs; and 20.17 hrs - 20.25 hrs) and at the time of solar flares (15.45 hrs - 15.54 hrs) and also on equipment with a SrF₂ photocathode when the sun was quiet (17.18 hrs - 17.23 hrs). Signal variations are connected with the change in the orientation of in-

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struments relative to the sun. Zero instrumental readings, even in polar regions, corresponded to the normal working background during laboratory tests; the effect from charged particle flows constituted a negligible portion of the effect from short-wave solar radiation. There were, however, occasional splashes of radiation when the equipment was not aimed at the sun. It is supposed that roentgen radiation, induced by particles of an atmospheric radiation belt in the polar region, may be a possible cause of this phenomenon. Comparison of the recordings for SiO_2 , LiF and CaF_2 filters with those for Al , $(\text{CH})_n$, Be and Cu filters showed that roentgen radiation is registered through Al and $(\text{CH})_n$ filters but not through a Cu filter ($1.4 - 3 \text{ \AA}$). The Be filter recording level increased distinctly at the time of solar flares, but it was negligible in quiet periods. The following conclusions are drawn on the basis of the processing of the measurement results. The radiation flow in the region $44 - 110 \text{ \AA}$ ($(\text{CH})_n$ -filter) was constant with a precision of $\pm 8\%$ and corresponded to $1.5 \times 10^7 \text{ pulses} \cdot \text{cm}^{-2} \cdot \text{sec}^{-1}$.

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